IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please CANCEL claims 6 and 23 AMEND claims 1-5, 7, 10-13, 15, 18-22, 24, 27-28 and 30 in accordance with the following:

1. (currently amended) An antenna element which is mounted on a circuit base board, comprising:

a dielectric substrate having an antenna pattern part; and

a junction conductor piercing said dielectric substrate, having its one end ~~being~~ connected to a feeding point of said antenna pattern part, wherein

~~the other end of said junction conductor is connected to a feeding conductor of said circuit base board at a mounting face side of said antenna element of said circuit base board~~

said junction conductor has a pillar portion piercing said dielectric substrate and a flange portion formed at the other end of the pillar portion;

said dielectric substrate includes a through hole for letting the pillar portion of said junction conductor pierce therein and a space portion for housing said flange portion, which is provided adjoining to the through hole; and

the end portion of said pillar portion of said junction conductor is connected to said feeding point of said antenna pattern part, and said flange portion is connected to a feeding conductor on said circuit base board on the side on which said antenna element is mounted.

2. (currently amended) The antenna element of claim 1, wherein ~~a space portion in which said junction conductor and said feeding conductor of a side of said circuit base board are made to connect is provided in said dielectric substrate~~

said circuit base board further includes said feeding conductor covered with an insulator and a recess portion exposing said feeding conductor to the same side on which said antenna element is mounted, and

said flange portion on said space portion side of said junction conductor in said dielectric substrate is connected to said feeding conductor exposed in said recess portion.

3. (currently amended) ~~The antenna element of claim 1, wherein a feeding point of said antenna pattern part is set to a recess portion of said dielectric substrate, and said junction conductor which is pierced to said dielectric substrate is connected to the feeding point of said antenna pattern part at an inside of said recess portion~~An antenna element which is mounted on a circuit base board, comprising:

a dielectric substrate having an antenna pattern part; and

a junction conductor disposed between said antenna pattern part and said circuit base board,

wherein said dielectric substrate includes a recess portion in which a feeding point of said antenna pattern part is disposed, and

wherein said junction conductor pierces said dielectric substrate, having its one end connected to the feeding point of said antenna pattern part in said recess portion of said dielectric substrate, and having its other end connected to a feeding conductor on said circuit base board on the side on which said antenna element is mounted.

4. (currently amended) ~~The antenna element of claim 1, wherein~~

~~said dielectric substrate has a through hole corresponding to the feeding point of said antenna pattern part, and a recess portion formed at an opening portion of said through hole correspondingly to a space portion in which said junction conductor and said feeding conductor of a side of said circuit base board are made to connect, and~~

~~said junction conductor at one end portion is connected to said feeding conductor and is stood on said circuit base board, and said junction conductor is pierced to said through hole of said dielectric substrate and is connected to said feeding point of said antenna pattern part~~ An antenna element which is mounted on a circuit base board, comprising:

a dielectric substrate having an antenna pattern part; and

a junction conductor disposed between said antenna pattern part and said circuit base board,

wherein said dielectric substrate includes a through hole corresponding to a feeding point of said antenna pattern part and a recess portion formed at an opening portion of said through hole; and

wherein said junction conductor pierces said through hole of said dielectric substrate and stands on said circuit base board as well, having its one end portion connected to a feeding conductor of said circuit base board and having its other end portion connected to said feeding point of said antenna pattern part.

5. (currently amended) ~~The antenna element of claim 1, wherein said dielectric substrate has a through hole corresponding to the feeding point of said antenna pattern part, a recess portion formed at an opening portion of said through hole correspondingly to a space portion in which said junction conductor and said feeding conductor of a side of said circuit base board are made to connect, and said junction conductor, piercing said through hole, being connected to said feeding point of said antenna pattern part at one end portion, and protruding in said recess portion at the other end portion~~ An antenna element which is mounted on a circuit base board, comprising:

a dielectric substrate having an antenna pattern part; and

a junction conductor disposed between said antenna pattern part and said circuit base board,

wherein said dielectric substrate includes a through hole corresponding to a feeding point of said antenna pattern part and a recess portion formed at an opening portion of said through hole; and

wherein said junction conductor pierces said through hole, having its one end portion connected to said feeding point of said antenna pattern part and having its other end portion faced toward said recess portion.

6. (cancelled)

7. (currently amended) The antenna element of claim ~~6~~ 1, wherein said pillar potion is set more thinly than thickness of said flange portion.

8. (original) The antenna element of claim 1, wherein said circuit base board and said dielectric substrate are fixed by an elastically adhesive material.

9. (original) The antenna element of claim 8, wherein said elastically adhesive material is a resin tape having adhesive layers at both faces.

10. (currently amended) ~~The antenna element of claim 6, wherein said flange portion is set larger than said through hole of said dielectric substrate and smaller than a recess portion formed at an opening portion of said through hole~~ An antenna element which is mounted on a circuit base board, comprising:

a dielectric substrate having an antenna pattern part; and

a junction conductor piercing said dielectric substrate, having its one end connected to a feeding point of said antenna pattern part,

wherein said junction conductor has a pillar portion piercing said through hole of said dielectric substrate to be connected to the feeding point of said antenna pattern part and a flange portion formed at the pillar portion;

wherein said flange portion of said junction conductor is connected to a feeding conductor on said circuit base board on the side on which said antenna element is mounted, and

wherein said flange portion of said junction conductor is set larger than said through hole of said dielectric substrate and smaller than a recess portion formed at an opening portion of said through hole.

11. (currently amended) A mounting method of an antenna element, comprising:

a process that forms an antenna element, which provides an antenna pattern part and a through hole corresponding to a feeding point of said antenna pattern part, in a dielectric substrate;

a process that connects ~~one end portion of a junction conductor to a feeding conductor and makes the junction conductor stand on a circuit base board~~ a flange portion of a junction conductor formed of a pillar portion and the flange portion to a feeding conductor on a circuit base board side, and that makes said junction conductor stand on said circuit base board; ~~and~~

a process that ~~makes~~ lets said junction conductor pierce ~~to~~ said through hole of said antenna element, and ~~also~~ that connects ~~a~~ an ~~pointed~~ end portion of said pillar portion of said junction conductor to said feeding point of said antenna pattern part; and

a process that bonds said circuit base board and said dielectric substrate by interposing an elastically adhesive material between them.

12. (currently amended) A mounting method of an antenna element, comprising:

a process that forms ~~the~~ an antenna element, ~~which provides~~ providing a dielectric substrate having an antenna pattern part, ~~a through hole corresponding to a feeding point of said antenna pattern part, and a junction conductor, being pierced to said through hole, being connected to said feeding point of said antenna pattern part at one end portion, and being made to protrude in an opening portion of said through hole at the other end portion, in dielectric substrate~~; and

a junction conductor disposed between said antenna pattern part and a feeding

conductor on a circuit base board; wherein said junction conductor has a pillar portion piercing said dielectric substrate and a flange portion formed at the other end of the pillar portion; wherein said dielectric substrate includes a through hole for letting the pillar portion of said junction conductor pierce therein and a space portion for housing said flange portion, which is provided adjoining to the through hole; and wherein an end portion of said pillar portion is connected to said antenna pattern part; and

a process that ~~installs~~ bonds said antenna element ~~on~~ to ~~a~~ said circuit base board by using an elastically adhesive material, and that connects ~~the other end portion of said junction conductor~~ said flange portion of said junction conductor to ~~a~~ the feeding conductor ~~of~~ on said circuit base board.

13. (currently amended) A plane antenna providing an antenna element which is mounted on a circuit base board, comprising:

a dielectric substrate ~~installed on a circuit base board through the intervention of a first ground pattern part~~ having an antenna pattern part;

a junction conductor~~, being connected to a feeding point of an antenna pattern part formed in said dielectric substrate at one end portion, and being made to pierce to said dielectric substrate at the other end portion and being made to protrude in a space portion between said dielectric substrate and said circuit base board~~ including a first ground pattern part interposed between said dielectric substrate and said circuit base board, a pillar portion piercing said dielectric substrate, and a flange portion formed at the pillar portion, wherein an end portion of said pillar portion is connected to a feeding point of said antenna pattern part formed on said dielectric substrate, and wherein said flange portion faces toward a space portion formed between said dielectric substrate and said circuit base board;

a feeding conductor, being led to said space portion from an inner layer portion of said circuit base board~~, and being~~ to be connected to ~~the other end~~ said flange portion of said junction conductor; and

a second ground pattern part ~~installed in a lower face side of said feeding conductor~~ made of conductor layers disposed on a lower face side of said feeding conductor, wherein a conductor removal part that has removed said conductor layers adjacent to a connecting portion of said junction conductor and said feeding conductor is set.

14. (original) The plane antenna of claim 13, wherein said circuit base board and said dielectric substrate are fixed by an elastically adhesive material.

15. (currently amended) The plane antenna of claim 13, wherein a first ground pattern part is ~~mounted~~ provided on an upper face side of said circuit base board, and an insulating substrate or a shielding plate having a second ground pattern part is provided to a rear face side of said circuit base board.

16. (original) The plane antenna of claim 14, wherein said elastically adhesive material is a resin tape having adhesive layers at both faces.

17. (original) A circuit base board on which a plane antenna providing an antenna pattern part in a dielectric substrate is mounted, comprising:

a junction conductor providing a flange portion;

a through hole formed in said dielectric substrate, said junction conductor being pierced to said through hole; and

a recess portion formed at an opening portion of said circuit base board side of said through hole, said recess portion housing said flange portion of said junction conductor, wherein

said junction conductor which is attached on said circuit base board in advance is made to pierce to said through hole of said dielectric substrate so that said flange portion is housed in said recess portion of said dielectric substrate, its pointed end portion is connected to said antenna pattern part, and said dielectric substrate and said circuit base board are also installed with close adhesion.

18. (currently amended) An electronic device providing an antenna element which is mounted on a circuit base board, comprising:

a dielectric substrate having an antenna pattern part; and

a junction conductor piercing said dielectric substrate, having its one end ~~being~~ connected to a feeding point of said antenna pattern part, wherein

~~the other end of said junction conductor is connected to a feeding conductor of said circuit base board at a mounting face side of said antenna element of said circuit base board~~

said junction conductor has a pillar portion piercing said dielectric substrate and a flange portion formed at the other end of the pillar portion;

said dielectric substrate includes a through hole for letting the pillar portion of said junction conductor pierce therein and a space portion for housing said flange portion, which is provided adjoining to the through hole; and

the end portion of said pillar portion of said junction conductor is connected to said feeding point of said antenna pattern part, and said flange portion is connected to a feeding conductor on said circuit base board on the side on which said antenna element is mounted.

19. (currently amended) The electronic device of claim 18, wherein ~~a space portion in which said junction conductor and said feeding conductor of a side of said circuit base board are made to connect is provided in said dielectric substrate~~ said circuit base board further includes said feeding conductor covered with an insulator and a recess portion exposing said feeding conductor to the same side on which said antenna element is mounted; and wherein said flange portion of said junction conductor on said space portion side of said dielectric substrate is connected to said feeding conductor exposed in said recess portion.

20. (currently amended) ~~The electronic device of claim 18, wherein a feeding point of said antenna pattern part is set to a recess portion of said dielectric substrate, and said junction conductor which is pierced to said dielectric substrate is connected to the feeding point of said antenna pattern part at an inside of said recess portion~~ An electronic device providing an antenna element which is mounted on a circuit base board, comprising:

a dielectric substrate having an antenna pattern part; and

a junction conductor disposed between said antenna pattern part and said circuit base board,

wherein said dielectric substrate includes a recess portion in which a feeding point of said antenna pattern part is disposed; and

wherein said junction conductor pierces said dielectric substrate, having its one end connected to the feeding point of said antenna pattern part in said recess portion of said dielectric substrate, and having its other end connected to a feeding conductor on said circuit base board on the side on which said antenna element is mounted.

21. (currently amended) ~~The electronic device of claim 18, wherein~~

~~said dielectric substrate has a through hole corresponding to the feeding point of said antenna pattern part, and a recess portion formed at an opening portion of said through hole correspondingly to a space portion in which said junction conductor and said feeding conductor of a side of said circuit base board are made to connect, and~~

~~said junction conductor at one end portion is connected to said feeding conductor and is stood on said circuit base board, and said junction conductor is pierced to said through hole of~~

~~said dielectric substrate and is connected to said feeding point of said antenna pattern part~~ An electronic device providing an antenna element which is mounted on a circuit base board, comprising:

a dielectric substrate having an antenna pattern part; and

a junction conductor disposed between said antenna pattern part and said circuit base board,

wherein said dielectric substrate includes a through hole corresponding to a feeding point of said antenna pattern part and a recess portion formed at an opening portion of said through hole; and

wherein said junction conductor pierces said through hole of said dielectric substrate and stands on said circuit base board as well, having its one end portion connected to a feeding conductor of said circuit base board and having its other end portion connected to said feeding point of said antenna pattern part.

22. (currently amended) ~~The electronic device of claim 18, wherein said dielectric substrate has a through hole corresponding to the feeding point of said antenna pattern part, a recess portion formed at an opening portion of said through hole correspondingly to a space portion in which said junction conductor and said feeding conductor of a side of said circuit base board are made to connect, and said junction conductor, piercing said through hole, being connected to said feeding point of said antenna pattern part at one end portion, and protruding in said recess portion at the other end portion~~ An electronic device providing an antenna element which is mounted on a circuit base board, comprising:

a dielectric substrate having an antenna pattern part; and

a junction conductor disposed between said antenna pattern part and said circuit base board,

wherein said dielectric substrate includes a through hole corresponding to a feeding point of said antenna pattern part and a recess portion formed at an opening portion of said through hole; and

wherein said junction conductor pierces said through hole, having its one end portion connected to said feeding point of said antenna pattern part and having its other end portion faced toward said recess portion.

23. (cancelled)

24. (currently amended) The electronic device of claim ~~23~~18, wherein said pillar potion is set more thinly than thickness of said flange portion.

25. (original) The electronic device of claim 18, wherein said circuit base board and said dielectric substrate are fixed by an elastically adhesive material.

26. (original) The electronic device of claim 25, wherein said elastically adhesive material is a resin tape having adhesive layers at both faces.

27. (currently amended) ~~The electronic device of claim 23, wherein said flange portion is set larger than said through hole of said dielectric substrate and smaller than a recess portion formed at an opening portion of said through hole~~ An electronic device providing an antenna element which is mounted on a circuit base board, comprising:

a dielectric substrate having an antenna pattern part; and

a junction conductor piercing said dielectric substrate, having its one end connected to a feeding point of said antenna pattern part,

wherein said junction conductor has a pillar portion piercing said through hole of said dielectric substrate to be connected to the feeding point of said antenna pattern part and a flange portion formed at the pillar portion;

wherein said flange portion of said junction conductor is connected to a feeding conductor on said circuit base board on the side on which said antenna element is mounted; and

wherein said flange portion of said junction conductor is set larger than said through hole of said dielectric substrate and smaller than a recess portion formed at an opening portion of said through hole.

28. (currently amended) An electronic device providing a plane antenna which is mounted on a circuit base board, comprising:

a dielectric substrate ~~installed on a circuit base board through the intervention of a first ground pattern part~~ having an antenna pattern part;

a junction conductor~~, being connected to a feeding point of an antenna pattern part formed in said dielectric substrate at one end portion, and being made to pierce to said dielectric substrate at the other end portion and being made to protrude in a space portion between said dielectric substrate and said circuit base board~~ including a first ground pattern part interposed between said dielectric substrate and said circuit base board, a pillar portion piercing said

dielectric substrate, and a flange portion formed at the pillar portion, wherein an end portion of said pillar portion is connected to a feeding point of said antenna pattern part formed on said dielectric substrate, and wherein said flange portion faces toward a space portion formed between said dielectric substrate and said circuit base board;

a feeding conductor, being led to said space portion from an inner layer portion of said circuit base board~~, and being~~ to be connected to ~~the other end~~ said flange portion of said junction conductor; and

a second ground pattern part ~~installed in a lower face side of said feeding conductor~~ made of conductor layers disposed on a lower face side of said feeding conductor, wherein a conductor removal part that has removed said conductor layers adjacent to a connecting portion of said junction conductor and said feeding conductor is set.

29. (original) The electronic device of claim 28, wherein said circuit base board and said dielectric substrate are fixed by an elastically adhesive material.

30. (currently amended) The electronic device of claim 28, wherein a first ground pattern part is ~~mounted~~ provided on an upper face side of said circuit base board, and an insulating substrate or a shielding plate having a second ground pattern part is provided to a rear face side of said circuit base board.

31. (original) The electronic device of claim 29, wherein said elastically adhesive material is a resin tape having adhesive layers at both faces.

32. (original) An electronic device comprising:

a circuit base board on which a plane antenna providing an antenna pattern part in a dielectric substrate is mounted;

a junction conductor providing a flange portion;

a through hole formed in said dielectric substrate, said junction conductor being pierced to said through hole; and

a recess portion formed at an opening portion of said circuit base board side of said through hole, said recess portion housing said flange portion of said junction conductor, wherein

said junction conductor which is attached on said circuit base board in advance is made to pierce to said through hole of said dielectric substrate so that said flange portion is housed in said recess portion of said dielectric substrate, its pointed end portion is connected to said

antenna pattern part, and said dielectric substrate and said circuit base board are also installed with close adhesion.